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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/385,927	08/30/1999	FRED GRUNER	42390.P7268	9797

7590 09/23/2004

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EXAMINER

WOOD, WILLIAM H

ART UNIT PAPER NUMBER

2124

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/385,927

Applicant(s)

GRUNER ET AL.

Examiner

William H. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 and 23-30 is/are allowed.
- 6) ☒ Claim(s) 31-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 091604
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## Interview Summary

Application No.

09/385,927

Applicant(s)

GRUNER ET AL.

Examiner

William H. Wood

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All participants (applicant, applicant's representative, PTO personnel):

(1) William H. Wood. (3)\_\_\_\_\_

(2) Michael J. Mallie. (4)\_\_\_\_\_

Date of Interview: 16 September 2004.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 20 and 23-37.

Identification of prior art discussed: Colavin.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Limitations of "if a successive instruction in the instruction stream is contained in the second shifter then ..." and "if the successive instruction is not contained ..." in the context of independent claims 20 and 26 were indicated as allowable by the office. Applicant was given the opportunity to adjust independent claims 31 and 35 in order for allowance, which he did not choose to pursue at the time. Discussion of limitation added to claims 31 and 35 in the last amendment was inconclusive.

### DETAILED ACTION

Claims 20, 23-37 are pending and have been examined.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 31-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new matter is *wherein the second shifter has a capacity to shift which is less than the maximum instruction length*.

3. Claims 31-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The non-enabled subject matter is *wherein the second shifter has a capacity to shift which is less than the maximum instruction length*.

#### ***Claim Rejections - 35 USC § 103***

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Colavin** (USPN 5,666,115) in view of **Riffe et al.** (USPN 4,502,111).

Claim 31

**Colavin** disclosed logic for aligning, the logic comprising:

- ♦ a first shifter (*figure 3, element 11*);
- ♦ a second shifter (*figure 3, element 13*);
- ♦ a length decoder (*figure 3, element 16*), wherein an output of the first shifter forms a direct input to the second shifter and exclusively defines data to be shifted therein (*figure 3, elements 11 and 13*), an output of the second shifter is sent to the length decoder via an intermediate latch (*figure 3, element 22*), and wherein a length of a current [data element] in the length decoder is directly input into the second shifter (*figure 3, elements 13 and 16*) and the second shifter shifts the data based exclusively on the length of the current instruction (*figure 3, elements 13 and 16*), wherein the second shifter has a capacity to shift which is less than the maximum instruction length (*column 6,*

*lines 36-40; potential or ability to shift "at the most" or "less than" the longest code).*

**Colavin** did not explicitly state *instruction* alignment and decoding. **Riffe** demonstrated that it was known at the time of invention to perform alignment of variable length instructions in instruction streams (column 1, lines 5-10). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the data alignment system of **Colavin** with performing alignment on instructions as the data as found in **Riffe's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide alignment of instructions and thus allowing a processor to quickly decode and execute those instructions by knowing the proper boundaries for instruction operation information (**Riffe**: column 1, lines 10-45).

#### Claim 32

**Colavin** and **Riffe** disclosed the logic of claim 31, wherein a length of the current instruction in the length decoder is input into the first shifter via an intermediate latch (**Colavin**: figure 3, element 21).

#### Claim 33

**Colavin** and **Riffe** did not explicitly state the logic of claim 31, wherein the first shifter has a greater shifting capacity than the second shifter. **Colavin** demonstrated that it was known at the time of invention to output of shifters is increasingly smaller (figure 3, outputs of elements 11 and 13). Official Notice is taken that it was known at the time of

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invention to use as little space as possible for components in logic. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the aligning and decoding system of **Colavin** and **Riffe** with a larger shifter followed by a smaller shifter as suggested by **Colavin**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use the bare minimum in space needed and **Colavin** clearly needs more space for the first shifter than the second shifter.

#### Claim 34

**Colavin** and **Riffe** disclosed the logic of claim 31, wherein the first shifter has a capacity of 16 bytes and the second shifter has a capacity of 8 bytes (*see claim 28's rejection*).

#### Claims 35-37

The limitations of logic claims 35-37 correspond to the limitation of logic claims 31-34 and are rejected in the same manner.

#### ***Allowable Subject Matter***

6. Claims 20 and 23-30 are allowed.
7. The following is an examiner's statement of reasons for allowance: the combined limitations of the independent claims 20 and 26 are not taught or fairly suggested by the prior art of record singly or in a properly motivated combination. Claim 20 provides two shift registers coupled one to the other, using a length decoder to



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produce the length of a current instruction and if a successive instruction is in the second shifter then shifting to the start of a successive instruction and if not then shifting the successive instruction into the second shifter and shifting to the start one clock cycle later as claimed. Additional independent claim 26 provides for limitations substantially similar to those of claim 26. Thus, the independent and all dependent claims are allowable over the prior art of record.

The prior art of record, **Colavin**, provides a first and second shifter producing the start of codes in a stream using in the second shifter the current decoded length. However, it does not provide the "if a successive instruction is in the second shifter ..." and the "if a successive instruction is not in the second shifter ..." in combination with the shifters and the length decoder as claimed in Applicant's independent claims. Thus, in view of the prior art of record, the claims are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

8. Applicant's arguments filed 01 June 2004 have been fully considered but they are not persuasive. Applicant argued: **Colavin** did not disclose *wherein the second shifter has a capacity to shift which is less than the maximum instruction length*. This is untrue. First, under the broadest reasonable interpretation of the claims, "capacity" indicates a

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potential or ability for accommodating (as defined in Merriam-Webster's Collegiate Dictionary). According to column 6, lines 36-40 of the primary reference, shift register performs a shift of "at the most" including "less than" the longest code. Clearly from the cited passage, just because the shifter has the ability to shift the longest instruction doesn't mean that it does. This interpretation is in-line with Applicant's arguments. Thus, the rejections are maintained.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (703)305-3305. The examiner can normally be reached 7:30am - 5:00pm Monday thru Thursday and 7:30am - 4:00pm every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood  
September 18, 2004